

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on August 6, 2003, and the references cited therewith. No claims are amended, no claims are canceled or added; as a result, claims 1-26 are now pending in the application.

Information Disclosure Statement

Applicant submitted an Information Disclosure Statement and a 1449 Form on December 20, 2001. Applicant respectfully requests that initialed copies of the 1449 Form be returned to Applicants' Representatives to indicate that the cited references have been considered by the Examiner.

§102 Rejection of the Claims

Claims 1-2, 4-12, 14-16 and 20-26 were rejected under 35 USC § 102(e) as being anticipated by Tobita (U.S. 2002/0090501).

Applicant respectfully traverses the rejection as failing to make out a proper showing of anticipation for the reasons set forth in the Response mailed June 19, 2003 which are hereby incorporated by reference herein.

Applicant does not admit that the Tobita application is prior art, and reserves the right to swear behind it at a later date. Nevertheless, Applicant respectfully submits that the claims are distinguishable over Tobita for the reasons argued below.

The cited Tobita application, published in the U.S. July 11, 2002, relates to a polymer sheet and a sheet of graphitized carbon fibers having a coating layer of ferromagnetic material on their surface to allow them to be oriented perpendicular to the sheet by applying a magnetic field.

Applicants again traverse the rejection based upon Tobita. The argument supporting the applicability of Tobita states:

“Tobita teaches that the graphitized carbon fibers may take the form of a nanotube (see page 2, [0029]), so the carbon fiber can be called carbon nanotube when it takes the form of a nanotube; the method of forming the device is not convincing as to the issue of patentability of the device itself, since the structure of the device is not changed (see

MPEP 2113); and the orientation of fibers is clearly stated in the abstract, shown in fig. 3, and stated in page 6, [0091].” (Office Action, page 6)

Applicant submits that the cited fragments from Tobita do not support a rejection based upon anticipation. The “Graphitized Carbon Fibers” of Tobita (see [0025] through [0035] and [0071 through 0083], for example) are not the “carbon nanotubes” of claim 1. In [0026] Tobita defines what he means by “graphitized carbon fibers”

“The material of the graphitized carbon fibers includes “condensed polycyclic hydrocarbon compounds such as naphthalene and phenanthrene, PAN (polyacrylonitrile), and condensed heterocyclic compounds such as a petroleum pitch and a coal-tar pitch. The material is preferably an optically anisotropic mesophase pitch”

Applicants submit that the “carbon nanotubes” of claim 1 are not anticipated by the graphitized carbon fibers of Tobita. The carbon nanotubes are not made by the procedures described in Tobita for making graphitized carbon fibers by “graphitizing” fibers of the named compounds before pulverization or cutting. Once that is done, Tobita states that the processed material “takes the form of fiber, including a pulverized product or a cut product that keeps the fibrous form” Tobita then speculates “However such forms as a scale, a whisker, a micro coil and a nanotube are also applicable.[0029]” Applicants submit that the cited passage uses nanotube merely to refer to alternative shapes of the fibers (also confirmed by [0064] which specifically refers to “nanotube-shaped carbon”). Considering Tobita as a whole, its references to “a nanotube” do not relate to carbon nanotubes of the sort discussed in applicant’s patent specification and it certainly does not provide an enabling disclosure to one of ordinary skill in the art, either for making carbon nanotubes generally or for making the thermal interface structure of claim 1.

Anticipation requires the presence in a single prior reference disclosure of each and every element of the claimed invention. Claim 1 recites: “at least one carbon nanotube.” In view of the very specific description of the processes in Tobita relative to manufacture of the graphitized carbon fibers of the preferred embodiment with a ferromagnetic coating, Applicants believe that the bare statement that nanotube shaped materials “are also applicable,” without a disclosure that would enable one to make the carbon nanotube structure called for in claims 1-2, 4-12, 14-16 and 20-26, fails to make a prima facie case of anticipation by Tobita.

Consider also the rejection as applied to the process claims 20-26. Tobita relates to structures made using fibers that must be coated with ferromagnetic material in order to align them prior to adding them to the polymer sheet, that teaching hardly can be argued to anticipate the method claims. Specifically, there is no showing of the “removing excess material” feature of claim 20.

Reconsideration and allowance of claims 1-2, 4-12, 14-16 and 20-26 is respectfully requested.

§103 Rejection of the Claims

Claims 3 and 13 were rejected under 35 USC § 103(a) as being unpatentable over Tobita. Applicant respectfully traverses the rejection of claims 3 and 13.

Since this is a rejection under 35 USC § 103(a) based solely upon the Tobita application, claims 3 and 13 are all allowable over Tobita for the same reasons stated above in response to the rejection of claims 1-2, 4-12, 14-16 and 20-26 under 35 USC § 102(e). Claims 3 and 13 are allowable as adding additional features to what is claimed in independent claims 1 and 9 which are believed to be allowable for the reasons stated above in response to the rejections under 35 USC § 102(e). Reconsideration and allowance of claims 1-3, 9 and 12-13 is respectfully requested.

Claims 17-19 were rejected under 35 USC § 103(a) as being unpatentable over Schumann et al. (U.S. 6,006,168) in view of Tobita. Applicant respectfully traverses the rejection of claims 17-19.

The rejection concedes that Schuman, which relates to a data processing system, does not show the details of the claimed “electronic assembly” and relies upon Tobita et al for that subject matter. Again, for the reasons stated above in detail in response to the rejections based solely upon Tobita, the present rejection fails to state a *prima facie* case of obviousness.

Reconsideration and allowance of claims 17 through 19 is respectfully requested.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney, Charles E. Steffey, at (612) 373-6970 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743

Respectfully submitted,

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By their Representatives,

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Date

November 6, 2003

By

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 6th day of November, 2003.

Anne M. Richards

Name

Signature